

WE CLAIM:

- Sub 1
1. A method for inducing an immune response comprising the step of applying to the unbroken surface of the skin a composition comprising antigenic particles and a pharmaceutically acceptable carrier, wherein said composition does not also comprise cholera toxin or a cholera toxoid protein.
 - Sub 2
2. The method of claim 1 wherein the antigenic particles are inactivated virus particles.
 3. The method of claim 2 wherein the particles are characterized by a diameter from about 10 to about 250 nm.
 4. The method of claim 3 wherein the antigenic particles are from about 50 to about 200 nm in diameter.
 - Sub 5
5. The method of claim 4 wherein the antigenic particles are about 100 nm in diameter.
 6. The method of claim 5 wherein the inactivated virus particles contain a sialic acid binding component.
 - Sub 7
The method of claim 6 wherein the inactivated virus particles are selected from the group consisting of orthomyxovirus particles and paramyxovirus particles.
 8. The method of claim 7 wherein the inactivated virus particles are influenza virus particles.
 9. The method of claim 1 wherein the antigenic particles are virus-like particles which comprise a sialic acid binding component.

Sub
A1
10. The method of claim 9 wherein the sialic acid binding component is a sialic acid specific hemagglutinin.

Sub
A2
11. The method of claim 10 wherein the sialic acid binding component is incorporated into the particles by mixed infection with an orthomyxovirus or a paramyxovirus and a virus of interest.

12. The method of claim 1 wherein the virus particles are mixed virus particles comprising a sialic acid binding component which is heterologous to the virus.

Sub
C1
13. The method of claim 12 wherein the sialic acid binding component is a recombinant hemagglutinin of influenza virus or parainfluenza virus.

Sub
A3
14. The method of claim 12 where the sialic acid binding component is incorporated through mixed infection with an orthomyxovirus or a paramyxovirus and a virus of interest.

15. The method of claim 12 wherein the virus particles are noninfectious particles of parainfluenza virus, hepatitis C virus, hepatitis virus/B, measles virus, vaccinia virus, herpes virus or respiratory syncytium virus. (RSV)

Sub
C1
16. The method of claim 2 wherein the virus particles have been inactivated by chemical treatment, ultraviolet irradiation, heat treatment or psoralen treatment.

17. The method of claim 16 wherein the chemical treatment is formalin treatment.

Sub
A4
18. A method for inducing an immune response comprising the step of applying to the unbroken surface of the skin a composition comprising live virus particles and a pharmaceutically acceptable carrier, wherein said composition does not also comprise cholera toxin.

19. The method of claim 18 wherein the live virus particles are attenuated virus particles.
20. The method of claim 18 wherein said virus particles comprise a sialic acid binding component.
21. The method of claim 20 wherein the sialic acid binding component is a hemagglutinin.
22. The method of claim 21 wherein the hemagglutinin is derived from an orthomyxovirus or a paramyxovirus.
23. The method of claim 22 wherein the hemagglutinin is derived from influenza virus or a parainfluenza virus.

1. The first step is to identify the problem. This involves understanding the current situation and what needs to be changed.